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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/500,833

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Dennis P Watson

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EXAMINER

KWIECINSKI, RYAN D

ART UNIT

PAPER NUMBER

3635

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/500,833	Applicant(s) WATSON ET AL.	
	Examiner RYAN D. KWIECINSKI	Art Unit 3635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/7/2004; 9/29/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters “200” and “300” and has been used to designate multiple embodiments of chords and web members respectively. The reference characters are used to designate the chords and web members of different dimensions which are shown as separate embodiments. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.

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- (b) **Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.**

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 17-19 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,519,908 B1 to Masterson et al.

Claim 17:

Masterson et al. disclose a method of assembling a joist, the method comprising: providing a first elongated joist chord (12, Fig.2) with a cross-section having a center line (vertical line through center of Fig.3) and including a substantially horizontal base (14), a pair of substantially vertical side walls (16) whose top ends are attached to the top wall, a pair of lower horizontal walls (18) extending inward from the bottom ends of the side walls towards the center line of the chord cross-section, and a pair of vertical attachment portions (20) extending downward from the inward-extending ends of the lower horizontal walls;

rigidly assembling (Column 5, lines 14-22) a first end of a web member (30) having a pair of opposed walls (34, 34, Fig.4) spaced to fit between and abut the pair of attachment portions (Fig.5) to the first chord such that the attachment portions abut the web member opposed walls; and

welding (Column 5, lines 14-22) each of the web member walls to a respective one of the attachment portions without moving the web member/chord assembly.

Claims 18-19:

Masterson et al. in view of Ragsdale disclose the method of claim 17:

Regarding claim 18, comprising providing a seat member (40, Fig.1) for attaching the joist to a structural member, the seat member having a pair of opposed vertical walls (44, 44, Fig.6) fitting between and abutting the chord attachment portions, and a notch (space between 44 and 44) for accommodating the web member;

wherein the assembly step comprises rigidly assembling the seat member to the chord such that the chord attachment portions abut the seat member opposed walls proximal to the web member opposed walls (Fig.1, shows seat 40 rigidly attached to 12 proximal web member 30); and

wherein the welding step comprises welding the seat member to the web member and to both the attachment portions (Column 4, lines 12-14; Fig.1 shows all 3 members abutting, therefore the members will be welded at the joint).

Regarding claim 19, comprising assembling a plurality of the webs (30, Fig.2) to the first chord, wherein the webs each have a second end (bottoms of 30), the method

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further comprising rigidly assembling a second chord, substantially identical to the first chord and disposed substantially parallel to the first chord, to the second end of each web at the second chord's attachment portions prior to the welding step (Column 5, lines 14-22).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,519,908 B1 to Masterson et al.

Claims 22-23:

Masterson et al. in view of Ragsdale disclose the method of claim 17:

Regarding claim 22, Masterson et al. does not specifically disclose placing the first chord/web assembly in a flat position prior to the welding step such that a side of the assembly is facing upward, and performing all the welding on the upward-facing side of the assembly.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the joist of Masterson et al. by placing the joist in a flat position. Forming the joist in a flat position and performing the welding on the upper surface allows the joist to be formed without unwanted forces applied to the welded joints do to the weight of the chord members and the web members. The joist being placed in a flat position will ensure complete weld and prevent unwanted stresses in undesired directions.

Regarding claim 23, Masterson et al. does not disclose wherein the seat member extends beyond a distal longitudinal end of the first chord.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the seat member of Masterson et al. extending beyond the end of the chord member in order to easily assembly the joist member to the surrounding structural framing. The seat member extending beyond the end will allow easy welding, bolting, adhering, etc.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,519,908 B1 to Masterson et al. in view of US 1,924,880 to Ragsdale.

Claim 1:

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Masterson et al. disclose a chord (Fig.3) for a joist, the chord having a length (12, Fig.2) and a cross-section (Fig.3) substantially symmetrical about a center line (vertical line through center of the cross section), the chord cross-section comprising:

- a horizontal base (14, Fig.3) having two ends (left and right); and

- a pair of downwardly extending legs (16, 18, 20 and opposite), each leg comprising:

- an upper vertical portion (16), perpendicular to the base, extending downward from a lower end of the base;

- an inwardly recessed portion (18), parallel to the base, extending towards the center line from a lower end of the upper vertical portion; and

- an attachment portion (20), perpendicular to the base, extending downward from an inner end of the inwardly recessed portion;

wherein the attachment portions of the legs define an opening (22) for receiving a web (30, Fig.5) of the joist, the opening extending substantially the entire length of the chord.

Masterson et al. does not disclose a chamfered portion extending downward and outward from one end of the base at an acute angle to the horizontal.

Ragsdale discloses a chamfered portion (the portion extending from 14 to 16', Fig.2) extending downward and outward from one end of the base at an acute angle to the horizontal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the chord of Masterson et al. with a chamfered

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portion extending from the base in order to provide a sleek, aesthetically appealing look to the joist as well as add structural strength to the chord member by providing a bend in the rolled steel chord. It is well known in the art to provide bends and chamfers in order to provide strength and rigidity to long, thin, hollow steel members.

Claims 2-9:

Masterson et al. in view of Ragsdale disclose the chord of claim 1:

Regarding claim 2, Masterson et al. and Ragsdale both disclose wherein the base and each leg portion is substantially planar (all flat surfaces in both prior art figures) throughout the entire length of the chord.

Regarding claim 3, Ragsdale also discloses wherein the acute angle is about 45 degrees (the shape is an octagon which will have 45 degree angles from the horizontal).

Regarding claim 4, wherein the chamfered portions of the legs are for stiffening the ends of the base (It is well known that chamfers will strengthen thin, hollow profile members, especially rolled steel).

Regarding claim 5, Masterson et al. also disclose wherein the base and the opening each have a respective width (W_c and W_l respectively; Fig.3), and the width of the base is greater than the width of the opening (Column 3, lines 18-21).

Regarding claim 6, Neither Masterson et al. nor Ragsdale alone disclose the specific ratio of the claim, but in combination it would have been obvious to have formed the chord with the claimed ratio of 1.3 to 1. The base member of Masterson et al. when provided with chamfers as disclosed by Ragsdale will have an overall smaller width and

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therefore will provide the specified ratio of the width of the base to the width of the opening. The ratio would be obvious to vary depending on the specified thickness of the web members, the overall size of the joist, and the desired strength of the chords and the joists.

Regarding claim 7, Masterson et al. also disclose wherein the distance between the upper vertical portions of the legs is about twice the vertical distance between the base and the inwardly recessed portions of the legs (h_5 is half of W_c ; Column 3, lines 18-21).

Regarding claim 8, Masterson et al. also disclose wherein the base and legs comprise cold rolled steel (Column 1, lines 50-52).

Regarding claim 9, wherein the distance between the upper vertical portions of the legs is greater than an overall vertical height of the legs (W_c is greater than $H_5 + h_f$); Fig.3 and Column 3, lines 18-21).

Claim 10:

Masterson et al. disclose a joist (Fig.2) having a first chord (Fig.3), the first chord having a length (12, Fig.2) and cross-section (Fig.3) substantially symmetrical about a center line (vertical line through center of the cross section), the chord cross-section comprising:

a horizontal base (14, Fig.3) having two ends (left and right); and

a pair of downwardly extending legs (16, 18, 20 and opposite), each leg comprising:

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an upper vertical portion (16), perpendicular to the base, extending downward from a lower end of the base;

an inwardly recessed portion (18), parallel to the base, extending towards the center line from a lower end of the upper vertical portion; and

an attachment portion (20), perpendicular to the base, extending downward from an inner end of the inwardly recessed portion;

wherein the attachment portions of the legs define an opening (22) for receiving a web (30, Fig.5) of the joist, the opening extending substantially the entire length of the chord.

Masterson et al. does not disclose a chamfered portion extending downward and outward from one end of the base at an acute angle to the horizontal.

Ragsdale discloses a chamfered portion (the portion extending from 14 to 16', Fig.2) extending downward and outward from one end of the base at an acute angle to the horizontal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the chord of Masterson et al. with a chamfered portion extending from the base in order to provide a sleek, aesthetically appealing look to the joist as well as add structural strength to the chord member by providing a bend in the rolled steel chord. It is well known in the art to provide bends and chamfers in order to provide strength and rigidity to long, thin, hollow steel members.

Claims 11-16:

Masterson et al. in view of Ragsdale disclose the joist of claim 10:

Regarding claim 11, Masterson et al. also discloses further comprising a plurality of webs (30, Fig.2), each web having a pair of opposed vertical walls (34, Fig.4) for fitting in the opening, a first end of each web being rigidly attached (Column 3, lines 47-49) to the first chord at the attachment portions.

Regarding claim 12, Masterson et al. discloses wherein the first chord has a longitudinal axis (Fig.2), but does not specifically disclose wherein at least one of the webs is attached to the chord at about a 45 degree angle to the longitudinal axis.

Masterson et al. does disclose wherein the angle varies depending on the length of the web members (Column 5, lines 5-13 and lines 27-35). It would have been obvious to have formed the joist with web members at 45 degrees if that was the desired design of the joist members. It is well known to form joists with different orientations depending on use and required strength.

Regarding claim 13, Masterson et al. also discloses wherein at least one of the webs is attached to the first chord perpendicular (Fig.9) to the longitudinal axis.

Regarding claim 14, Masterson et al. also discloses wherein the webs each have a second end (bottom of 30), the joist further comprising a second chord 24, Fig.5) substantially identical to the first chord and disposed substantially parallel to the first chord (Fig.2), the second end of each web being rigidly attached (Column 5, lines 17-19) to the second chord at the second chord's attachment portions.

Regarding claim 15, wherein the joist comprises a Warren truss (Fig.8) or a Howe truss (Fig.9).

Regarding claim 16, further comprising a seat member (40, Fig.1) for attaching the joist to a structural member, the seat member having a pair of opposed vertical walls (44,44, Fig.6)for fitting in the opening and abutting the first chord attachment portions (Fig.6), a notch (space between 44 and 44) disposed such that the seat member is rigidly attachable to the attachment portions and to one of the web members (Fig.2 shows web member and chord in contact with seat 40), and a pair of flanges (46,46, Fig.6) for attachment to the structural member.

Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,519,908 B1 to Masterson et al. in view of US 3,639,962 to Gooder.

Claim 20:

Masterson et al. disclose the method of claim 19, but does not disclose inducing camber in the first and second chords prior to the welding step.

Gooder discloses inducing a camber in the chords prior to the welding step (Column 7, lines 27-71).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the joist of Masterson et al. with a predetermined camber in order to allow a certain amount of yield in the joist when a load is applied which will prevent sag in the joist. It is notoriously well known to form load bearing structures with a predetermined stress or camber in order to prevent the load bearing

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structure from sagging below the level plane surface.

Claim 21:

Masterson et al. in view of Gooder disclose the method of claim 20, Gooder does not specifically disclose inducing the camber at a ratio of approximately 1 inch per 50 feet of the length of the assembled joist, but does in fact disclose increases the camber as the length of the joist increases (Column 1, lines 45-46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the joist with a camber of 1 inch over 50 feet. Gooder discloses a camber of $\frac{3}{8}$ inch over 20 feet and a camber of $\frac{3}{4}$ inch over 40 feet so it would have been obvious to have also increased the camber another fraction of an inch over another 10 feet of joist length. The longer the joist, the more the joist is going to flex when a load is applied therefore a larger camber is necessary.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN D. KWIECINSKI whose telephone number is (571)272-5160. The examiner can normally be reached on Monday - Friday from 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basil Katcheves can be reached on (571)272-6846. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RDK

/Ryan D Kwiecinski/
Examiner, Art Unit 3635

/Basil Katcheves/
Primary Examiner, Art Unit 3635